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**(54) POLISHING PAD WITH GROOVE**

(57) Abstract:

**PROBLEM TO BE SOLVED:** To make faster the polishing speed on the surface of a wafer by a chemical mechanical polishing method by a method wherein at least a polishing face part is formed of a foamed plastic, the polishing face part is provided with a groove and the surface roughness of the polishing face part is specified.

**SOLUTION:** In this polishing pad which is used, at least a polishing face part is formed of a foamed plastic, and a polishing face 11 is provided with grooves 12. A dressing operation is performed to the polishing face 11 of the polishing pad in such a way that the surface roughness of the polishing face 11 is at 0.5 to 15  $\mu\text{m}$  in terms of surface roughness prescribed in JIS-B0601. Then, by using the polishing pad, a material to be polished is polished. In the grooves 12, a depth D (as the

*foam*

height of every protrusion 13 existing between the adjacent grooves), a width  $W$ , a groove pitch( $p$ ) and the width  $S$  of every protrusion 13 are set. It is preferable that the depth  $D$  of every groove is set at 0.1 mm or higher so as to be a range of  $4/5$  or lower of the thickness of the pad, that the width  $W$  of every groove is set at 0.1 to 5.0 mm and that the groove pitch( $p$ ) is set to be 1.0 to 50 mm. It is more preferable that the depth  $D$  of every groove is set at 0.1 to 1.0 mm, that the groove width  $W$  of every groove is set to be 0.15 to 0.3 mm and that the groove pitch( $p$ ) is set to be 1.5 to 10 mm.

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